

**UNIVERSITI TEKNOLOGI MARA**

**INCIDENCE AND PREDICTORS  
OF ACUTE KIDNEY INJURY  
IN A TERTIARY CARE  
HOSPITALIZED PATIENTS  
RECEIVING INTRAVENOUS COLISTIN**

**ROS SAKINAH BINTI KAMALUDIN**

Dissertation submitted in partial fulfilment  
of the requirements for the degree of  
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**Faculty of Pharmacy**

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I certify that a Panel of Examiners has met on 21st January 2016 to conduct the final examination of Ros Sakinah binti Kamaludin on her Master of Clinical Pharmacy thesis entitled “Incidence and Predictors of Acute Kidney Injury in a Tertiary Care Hospitalized Patients Receiving Intravenous Colistin” in accordance with Universiti Teknologi MARA Act 1976 (Akta 173). The Panel of Examiners recommends that the student be awarded the relevant degree. The panel of Examiners was as follows:

Noorizan Abd Aziz, PhD  
Professor  
Department of Pharmacy Practice  
Faculty of Pharmacy  
Universiti Teknologi MARA  
(Supervisor)

Neoh Chin Fen, PhD  
Senior Lecturer  
Department of Pharmacy Practice  
Faculty of Pharmacy  
Universiti Teknologi MARA  
(Internal Examiner)

Khairil Anuar Md Isa  
Lecturer  
Department of Basic Sciences  
Faculty of Health Sciences  
Universiti Teknologi MARA  
(External Examiner)

**AISHAH ADAM, PhD**  
Professor  
Dean  
Faculty of Pharmacy  
Universiti Teknologi MARA

## AUTHOR'S DECLARATION

I declare that the work in this dissertation was carried out in accordance with the regulations of Universiti Teknologi MARA. It is original and is the result of my own work, unless otherwise indicated or acknowledged as referenced work. This thesis has not been submitted to any other academic institution or non-academic institution for any degree or qualification.

I, hereby, acknowledge that I have been supplied with the Academic Rules and Regulations for Post Graduate, Universiti Teknologi MARA, regulating the conduct of my study and research.

Name of student : Ros Sakinah binti Kamaludin

Student I.D. No. : 2014669634

Programme : Master in Clinical Pharmacy

Faculty : Pharmacy

Dissertation Title : Incidence and Predictors of Acute Kidney Injury in  
a Tertiary Care Hospitalized Patients Receiving  
Intravenous Colistin

Signature of Student : .....

## ABSTRACT

Colistin is an old antibiotic which use has been abandoned due to its nephrotoxicity. The rise of multidrug- resistance bacterial infections over the decade has led to the resurgence of colistin use. Since then, researches have taken interest into colistin including the incidence and predictors of colistin- associated acute kidney injury (AKI). Studies in other regions reported a wide range of incidence and multiple predictors of colistin- associated AKI. Since to date there is no such data from local healthcare setting, this retrospective cohort study aimed to determine the incidence and predictors of colistin- associated AKI in a Malaysian tertiary healthcare. 77 adult patients who received intravenous (IV) colistin in Hospital Raja Permaisuri Bainun in 2014 until September 2015 were included in the analysis. The incidence of colistin- associated AKI was 31.2% based on the Risk, Injury, Failure; Loss and End-stage Renal Disease (RIFLE) criteria employed. The predictors of colistin- associated AKI found were the length of hospital stay prior to colistin initiation (OR 1.044, 95% CI 1.004- 1.085;  $p= 0.03$ ) and mechanical ventilation (OR 3.706, 95% CI 1.062- 12.940;  $p= 0.04$ ). Study population profile and colistin regimen characteristics were comparable to those demonstrated by previous studies. Drug- event causality assessment using Naranjo Adverse Drug Reaction Scale revealed all of the AKI cases fell into 'Possible' category. The reported incidence validates the concern of colistin- associated AKI. Even though the predictors of such event varied, efforts to minimize colistin- associated AKI by controlling the risk factors are consistently warranted.

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